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Lower trapezius muscle avulsion from thoracic spinous processes in a patient with a history of trauma

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Lower trapezius muscle injuries have not been previously described in the literature. We present a case of avulsion of the trapezius muscle from the T3-T9 spinous processes with subsequent hematoma formation, seen on magnetic resonance imaging.

Case report

A 39-year-old man with no past medical history presented to the internist with severe midback pain between the scapulae, two weeks after a motor vehicle accident. The patient sustained a severe hyperflexion injury. He suffered back pain, spasm, and multiple bruises as a result of the collision.

On physical examination, there was decreased range of motion of the back. The physician palpated a hematoma in the midback and noted multiple soft-tissue contusions in the same area. MRI was then ordered to evaluate the thoracic spine (Figs. 1 and 2).

The patient was referred to an orthopedic surgeon for further management. The patient opted for nonoperative treatment, which included pain management and bedrest.

Discussion

Typically, radiographs of the spine are first performed in the setting of trauma. In this case, however, MRI of the thoracic spine was ordered first, in part due to the subacute

Figure 1. Two adjacent sagittal STIR MR images show a large fluid collection in the posterior subcutaneous fat tracking along the deep fascia at midline that represents a hematoma. It measures approximately 3.2 (anteroposterior) x 22.6 (craniocaudal) x 7.7 (transverse) cm. It extends from approximately T4 to T12-L1. There is avulsion of the trapezius muscles from the T3-T9 spinous processes, with fragments of torn muscle visible within the fluid collection.

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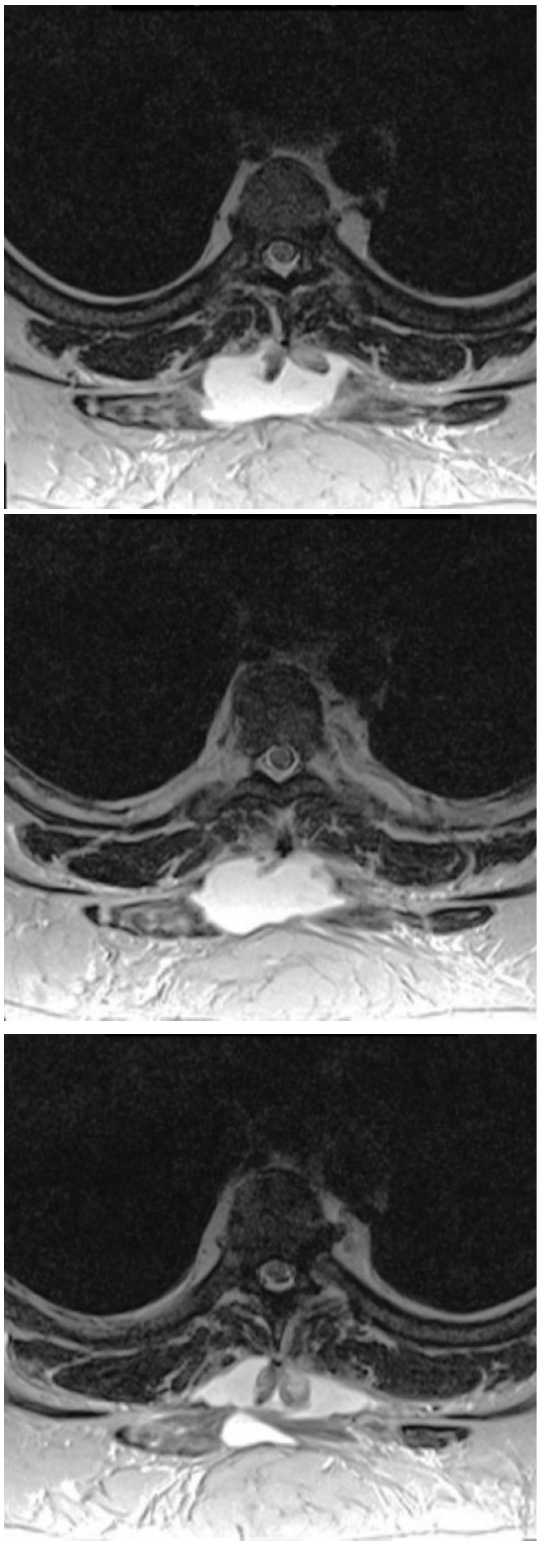

Figure 2. Three adjacent, axial, T2-weighted MR images show retraction of the trapezius muscles from the spinous processes with surrounding hematoma. There are areas of nodularity within the fluid collection that represent torn fragments of muscle.

timing of the injury. There was no evidence of fracture on the MRI. In hyperflexion injuries, spinous process fractures are common. The most common mechanism of action is contraction of the trapezius and rhomboid muscles, which causes an avulsion of the spinous process (1). In this case, there was avulsion of the trapezius muscle rather than the spinous process by a similar mechanism.

In the setting of trauma, there have been reported cases only of upper trapezius muscle injury and none of lower injury. Type III and greater acromioclavicular joint injuries are associated with avulsion of the deltoid and trapezius from the distal clavicle (2). Isolated upper-trapezius muscle strain and avulsion have been described in a patient with multiple sclerosis and spasticity, but not in the setting of more acute trauma (3).

In summary, lower-trapezius muscle avulsion in the setting of trauma is an atypical event. In a patient with persistent back pain following trauma and no evidence of fracture, MRI is an excellent tool to look at uncommon muscular or soft-tissue injuries.

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